



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,843	05/30/2007	Desmond Ebenezer	920629-104211	5436
24628 7590 10/20/2009 Husch Blackwell Sanders, LLP Husch Blackwell Sanders LLP Welsh & Katz 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606				
EXAMINER				
HOLLINGTON, JERMELE M				
ART UNIT		PAPER NUMBER		
2829				
MAIL DATE		DELIVERY MODE		
10/20/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,843

Applicant(s)

EBENEZER ET AL.

Examiner

Jermele M. Hollington

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-23 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-23 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings were received on October 6, 2009. These drawings are approved.

Specification

2. The disclosure is objected to because of the following informalities: since Figs. 6-8 are cancelled in the previous amendment, the applicants should delete the brief description of the above figures located on page 7, line 27- page 8, line 2.

Appropriate correction is required.

Claim Objections

3. Claim 23 is objected to because of the following informalities: in lines 2-3, applicants should place an --;-- in between the words "coil(3)" and "forming". Appropriate correction is required.

Response to Arguments

4. Applicant's arguments filed October 6, 2009 have been fully considered but they are not persuasive.

a) The applicants argues: "*Prior art Figs. 1 and 2 do not disclose the limitations in claims 23 and 32 which reads a single homogeneous wire forms both the coil and the central conductor. The term homogeneous recited in the claims means having a uniform structure. The term single means one. Thus, Applicant's recited claim limitation means that the coil and the conductor form one uniform wire.*"

In response to the above arguments, the examiner disagrees. The examiner used, based on the drawing filed on October 11, 2006, item #16 as the coil and item #18 as the conductor. Item

#16 (coil) is wrapped around item 18 (conductor). In order to hold item 16 around item 18, there is a sheath 14, used as the claimed single homogenous wire, form around both item 16 and item 18. As shown sheath 14 forms around both item 16 and item 18. Furthermore, sheath 14 is one structure piece (homogenous) of conductor. Therefore, the examiner believes the prior art still reads on the claimed invention.

b) The applicants further argue: *"Claim 1 makes it clear that the wire is insulated. Thus the wire is distinct from the insulation. It is the wire and not the insulation that has to be uniform. The prior art, as illustrated below, shows a point of non-uniformity at the "X". Thus the prior art does not anticipate claim 1."*

In response to the above arguments, the claim states: "... a single homogeneous wire forms both the coil and the central conductor and said wire is insulated..." The examiner used sheath 14 as the wire that forms both coil and central conductor as shown in Figs. 1-2. On page 2, lines 19-20, it states: "The wire contained in a Rogowski coil is generally provided with an insulated covering or coating." From the examiner's view, the wire is the sheath 14. Therefore, the examiner believes the prior art still reads on the claimed invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-6, 10-13, 15, 23 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by admitted prior art of Figs. 1-2.

Regarding claim 1, admitted prior art of Figs. 1-2 disclose current measurement apparatus comprising a Rogowski coil (shown but not numbered) wherein the Rogowski coil (shown but not numbered) comprises a coil (shown but not numbered) and a central conductor (shown but not numbered) extending through the coil wherein a single homogeneous wire (outer sheath 14) forms both the coil and the central conductor and said wire (14) is insulated prior to forming the Rogowski coil.

Regarding claim 2, admitted prior art of Figs. 1-2 disclose the wire (14) is insulated by insulating material [see page 2, lines 19-20].

Regarding claim 3, admitted prior art of Figs. 1-2 disclose insulating material is resistant to physical damage [see page 2, lines 19-30].

Regarding claim 4, admitted prior art of Figs. 1-2 disclose complete outer surface of the wire (14) is coated with an insulating material [see page 2, lines 19-20].

Regarding claim 5, admitted prior art of Figs. 1-2 disclose the complete outer surface of the wire (14) is coated with an insulating material which provides reinforced insulation [see page 2, lines 19-30].

Regarding claim 6, admitted prior art of Figs. 1-2 disclose the insulation material comprises a wrapping for the wire (14) [see page 2, lines 19-20].

Regarding claim 10, admitted prior art of Figs. 1-2 disclose the Rogowski coil (shown but not numbered) is formed by providing a straight central conductor (shown but not numbered) section and winding a coil (shown but not numbered) around at least a part of the straight electrical conductor section (shown but not numbered).

Regarding claim 11, admitted prior art of Figs. 1-2 disclose Rogowski coil comprises an inner sheath (inner sheath 12).

Regarding claim 13, admitted prior art of Figs. 1-2 disclose the Rogowski coil comprises inherently [see **Note** below] an end wherein the end does not require an insulation cap (cap 11).

[**Note:** Although the prior art does not specifically disclose the claimed "an end", this feature is seen to be an inherent teaching of that device since it is well known in the art that Rogowski coil has ends for the coil to function as intended.]

Regarding claim 15, admitted prior art of Figs. 1-2 disclose the Rogowski coil comprises inherently [see **Note** below] a first end and a second end.

[**Note:** Although the prior art does not specifically disclose the claimed "an end", this feature is seen to be an inherent teaching of that device since it is well known in the art that Rogowski coil has ends for the coil to function as intended.]

Regarding claim 23, admitted prior art of Figs. 1-2 disclose a method of forming current measurement apparatus comprising forming a Rogowski coil (shown but not numbered) having a coil (shown but not numbered) and a central conductor (shown but not numbered) extending through the coil; forming said coil and central conductor from a single homogeneous conductor (outer sheath 14), said homogeneous conductor is insulated [see page 2, lines 19-20].

Regarding claim 32, admitted prior art of Figs. 1-2 disclose a Rogowski coil (shown but not numbered) having a coil (shown but not numbered) and a central conductor (shown but not numbered) extending through a center of the coil and a single homogeneous conductor (14) which is seamless forms both the coil and the central conductor, and the homogeneous conductor is insulated [see page 2, lines 19-20].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art of Figs 1-2 in view of Ishii et al (EP 1394818A1).

Regarding claim 7, admitted prior art of Figs 1-2 disclose insulating material [see page 2, lines 19-20]. However, they do not disclose insulating material is an extrusion. Ishii et al disclose [see Fig. 1] a current measurement apparatus comprising a wire (conductor 6a) that is insulated by insulating material (insulating layers 6b, 6c and 6d) that is an extrusion (see paragraph

[0059]). Further, Ishii et al teaches that the addition of insulating materials is advantageous because it helps cover the wire to provide more heat resistance while increasing production speed (see paragraphs [0002], [0008]-[0009]). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Bosco et al by adding insulating material around the wire as taught by Ishii et al in order to provide more heat resistance while increasing production speed during used of the current measurement.

Regarding claim 9, Ishii et al disclose the insulating material (6b, 6 and 6d) coating is less than or equal to 0.125mm (see paragraph [0059]).

Regarding claim 14, Ishii et al disclose the wire (6a) comprises a plurality of layers of insulating material (6b, 6c and 6d).

9. Claims 16-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over admitted prior art of Figs 1-2 in view of Kato (6885183).

Regarding claim 16, admitted prior art of Figs 1-2 disclose a Rogowski coil (shown but not numbered). Nevertheless, it is well known, as shown by Kato, that the coil in use, the first end is arranged, in use, to locate adjacent to the second end as claimed. Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end (end 9a) is arranged, in use, to locate adjacent to the second end (end 9b).

Regarding claim 17, admitted prior art of Figs 1-2 disclose a Rogowski coil (shown but not numbered). Nevertheless, it is well known, as shown by Kato, that the coil has a first end member located on the first end is arranged, in use, to engage a second end member located on the second end. Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end member

(beginning loop 12a) located on the first end (9a) is arranged, in use, to engage a second end member (end loop 12b) located on the second end (9b).

Regarding claim 18, admitted prior art of Figs 1-2 disclose a Rogowski coil (shown but not numbered). Nevertheless, it is well known, as shown by Kato, that the coil has a first end member located on one end of the Rogowski coil is arranged, in use, to cooperate with a second end member located on a second end of the Rogowski coil. Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end member (12a) located on one end (9a) of the Rogowski coil (12) is arranged, in use, to cooperate with a second end member (12b) located on a second end (9b) of the Rogowski coil (12).

Regarding claim 19, admitted prior art of Figs 1-2 a Rogowski coil (shown but not numbered). Nevertheless, it is well known, as shown by Kato, that the coil has a first end of the Rogowski coil is arranged, in use, to cooperate with a second end member located on the second end of the Rogowski coil in order to form a contiguous loop. Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end (9a) of the Rogowski coil (12) is arranged, in use, to cooperate with a second end member (12b) located on the second end (9b) of the Rogowski coil (12) in order to form a contiguous loop.

Regarding claim 20, admitted prior art of Figs 1-2 disclose a Rogowski coil (shown but not numbered). Nevertheless, it is well known, as shown by Kato, that the coil has a first end of the Rogowski coil is arranged to magnetically cooperate with a second end of the Rogowski coil. Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end (9a) of the Rogowski coil (12) is arranged to magnetically cooperate with a second end (9b) of the Rogowski coil (12).

Regarding claim 21, Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end (9a) of the Rogowski coil (12) is arranged, in use, to cooperate with a second end member (12b) located on a second end (9b) of the Rogowski coil (12) in order to form a contiguous loop the first end member (12a) comprises a female member and the second end member (12b) comprises a male member.

Regarding claim 22, Kato disclosed in Fig. 1, that Rogowski coil (12) has a first end member (12a) is arranged in use, to be secured to the second end member (12b) solely by magnetic force.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:00 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jermele M. Hollington/
Primary Examiner
Art Unit 2829

/J. M. H./
October 14, 2009